STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCE CONTROL

In the Matter of:	)	Case No.: PAT-FY08/09-03
	)	
CHEMICAL WASTE MANAGEMENT, INC., BAKERSFIELD FACILITY	)	CHEMICAL WASTE MANAGEMENT, INC. OPENING BRIEF ON APPEAL AND SUPPORTING STATEMENT OF REASONS
	)	
EPA ID. No. CAT000624056	)	
	)	CASE NO: 05-CA-624
	)	Division A

1. INTRODUCTION

In response to the Permit Appeals Officer's February 10, 2009 Order to Set Briefing Period for Petition for Review and Denial of Review ("Briefing Order"), Chemical Waste Management, Inc. ("CWM") respectfully submits this Opening Brief on Appeal and Supporting Statement of Reasons ("Opening Brief"). In support of this Opening Brief, CWM states the following:

2. BACKGROUND

2.1 Site History

The Bakersfield facility ("the Facility" or "the Site") is a 150-acre closed landfill[1] located approximately 13 miles northeast of the City of Bakersfield in Kern County. Following is a brief chronology of Facility operations and closure:

[1] While operated by CWM, the active Site included nine solar evaporation ponds, two landfills, and one spreading area.

- **1973 to May 1985 Operation of Facility:** The Facility opened in 1973. From 1973 to 1981, it was owned and operated by MP Disposal Company, Inc. In 1981, CWM purchased the Site and continued operations. The Facility was permitted as a Class II-I site and accepted primarily non-hazardous oil field wastes. Some 99.76% of all waste received at the Site was non-hazardous, with no clear formal documentation that the remainder was RCRA-regulated hazardous waste. However, like many facilities, it filed a Part A application and became regulated under RCRA. By May 1985, the Facility stopped receiving wastes altogether and site closure was initiated.
- **November 1985 Closure Plan Submitted to DHS:** CWM submitted a Closure Plan to the California Department of Health Services ("DHS"), a predecessor to the Department of Toxic Substances Control ("DTSC" or "Agency").
- **June 26, 1987 Closure Plan Approved:** DHS approved the Closure Plan for the Site by letter dated June 26, 1987.
- **November 1987 Completion of Closure Construction:** In November 1987, CWM completed construction of the measures required for Site closure, including: (i) stabilizing materials in all surface impoundments; (ii) consolidating material in designated waste management units; (iii) constructing drainage and erosion control features; (iv) grading for placement of a closure cover; and (v) installing a closure cover containing a minimum of 18 inches of compacted clay and 15 inches of top soil over all disposal areas.
- **April 1, 1988 Closure Construction Report:** CWM submitted a Closure Construction Report to DHS. This report included a certification by an independent engineer that the

closure construction was performed in accordance with the approved Closure Plan. DTSC has deemed April 1, 1988 the official beginning of the post-closure care period.

- **March 31, 1989 Closure Plan Certified:** The Facility Closure Plan was certified and accepted by DHS as complete by letter dated March 31, 1989.
- **April 30, 1991 Post-Closure Permit:** DHS issued a RCRA Post-Closure Permit ("Original Post-Closure Permit") for the Facility on April 30, 1991. The Original Post-Closure Permit established a 30-year post-closure care period beginning in 1988 and ending in 2018. The Original Post-Closure Permit was scheduled for renewal in 2001, ten years after it was first issued.
- **October 31, 2000 Renewal Application**: CWM submitted a RCRA Post-Closure Permit Renewal Application ("Renewal Application"). CWM is currently operating under the terms of the Original Post-Closure Permit.
- **January 26, 2004 Notice of Deficiency for Renewal Application**: On January 26, 2004, CWM received a Notice of Deficiency ("NOD") from DTSC for its October 31, 2000 Renewal Application. The NOD proposed to: (1) start a new 30-year post-closure period for the Facility; (2) require financial assurances that reflect the extended period; and (3) require submission of plans for extensive repairs or replacement of the Facility's cover.
- **June 10, 2004 CWM Response to NOD**: On June 10, 2004, CWM provided a Response to the NOD.[2]

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[2] Letter from Christopher Cullison (CWM) to Tony Hashemian (DTSC), June 10, 2004, attached as **Tab 1**.

2.2 DTSC/ CWM Discussions Following NOD

CWM and DTSC met several times to discuss DTSC's effort to extend the post-closure care period at the Facility beyond the initial 30-year period established in the regulations. According to DTSC, "*the California Code of Regulations, title 22, section 66264.117(b)(2)(B) allows DTSC to extend the post-closure care period if DTSC finds that the extended period is necessary to protect human health and the environment.*"[3] CWM responded by explaining that the data from the Site indicated no risk of harm to human health or the environment. CWM also asked DTSC to provide its finding that such a threat exists.

In a response dated March 22, 2004, DTSC argued that it can extend the 30-year post-closure care period at the time of each permit renewal and that it did not need to rely on the authority provided by 22 Cal. Code Reg. § 66264.117.[4] In the same letter, however, DTSC appeared to acknowledge that it needed *some* basis for seeking to extend the post-closure care period, claiming that its proposal to extend the period was "*based on the nature of the waste that will remain in [sic] at the site in perpetuity*."[5]

A month later, DTSC sent a follow-up letter to CWM setting forth the legal basis for its contention that it could extend the 30-year post-closure care period "*for at least a 100 year post closure period*."[6] First, the letter noted that the hazardous waste regulations "*require the final cover of a surface impoundment or landfill, respectfully [sic] to prevent the downward entry of*

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[3] Letter from Tony Hashemian (DTSC) to Christopher Cullison (CWM), January 26, 2004, attached as **Tab 2**.

[4] *See* Letter from Barbara Coler (DTSC) to Charles White (CWM), March 22, 2004, attached as **Tab 3**.

[5] *Id.* at 2.

[6] Letter from Wade Cornwall (DTSC) to Christopher Cullison (CWM), April 14, 2004, attached as **Tab 4**.

water into the closed surface impoundment or landfill throughout a period of at least 100 years."[7] Second, the letter stated that the regulations require DTSC to release the owner or operator from financial assurance requirements only after all post-closure care requirements have been met."[8] The letter then concluded:

> DTSC has interpreted these sections, which are intentionally more stringent than the federal regulations, to mean that ***the post-closure care period for a surface impoundment or landfill is at least 100 years*** and that ***adequate financial assurance must be maintained throughout the post-closure care period***. While it is true that Health and Safety Code section 25245(a)(2) and California Code of Regulations, section 66264.117 set an initial 30 year benchmark post-closure period, this benchmark is a minimum standard to be applied to all post-closure facilities in the absence of a more specific standard. ***In the case of surface impoundments or landfills, the more specific 100 year regulatory standard applies***.[9]

Notably, the letter did not provide a single example of a site where DTSC has applied this interpretation to extend the 30-year post-closure period to 100 years. Nor did it cite any regulation establishing a 100-year post-closure care period in the State of California.

On May 4, 2005, DTSC issued a Technical Review Letter that asked for additional studies and directed CWM to prepare a new consolidated permit application.[10] On August 5, 2005, CWM submitted a revised RCRA Post Closure Permit Renewal Application, as requested.

2.3 Post-Closure Permit Renewal and Petition for Review

In June 2006, DTSC published a draft of what is now the Appealed Post-Closure Permit and issued a public notice requesting comments on the draft as well as its Finding of Fact

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7 *Id*. at 2.

8 *Id.*

9 *Id*. at 2 (emphasis added).

10 Letter from Scott Ward (DTSC) to Phil Perley (CWM), May 4, 2005, attached as **Tab 5**.

Document and Fact Sheet. CWM was the only party that commented on these documents.[11] In its comments, CWM explained that, while it agreed with certain aspects of the draft Post-Closure Permit, it strongly disagreed with DTSC's view that "*it is necessary to extend the post-closure period for the [CWM Facility] a minimum of thirty years from 2006*" and that the cover was not adequately protective.[12] Extending the post-closure period for an additional 30 years, beginning in 2006, would mean that the **post-closure period would end in 2036,** and **not 2018,** as contemplated in the Original Post-Closure Permit.

CWM explained that, because the Site is low risk, it would be inappropriate (and certainly premature) to extend the post-closure period beyond the initial 30 years. CWM also contested DTSC's proposal to require reconstruction of the Facility cover. It did so by referencing the substantial body of information and analytical data accumulated over the course of many years. These data, and studies conducted since 2006, show that there are no hazardous wastes at the Site and no hazardous constituents in Site groundwater. They also confirm that the Facility cover continues to meet the Title 22 performance standards and is operating effectively to prevent rainwater intrusion into underlying (non-hazardous) wastes.

In response to CWM's comments, DTSC deleted from the draft Post-Closure Permit language stating that "*it finds it necessary to extend the post-closure period…for a minimum of thirty years from 2006*."[13] DTSC declined, however, to rectify its 30-year extension of the post-closure period and continued to require 30 more years of financial assurances and monitoring.

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11 Letter from Phil Perley (CWM) to Scott Ward (DTSC), August 31, 2006, attached as **Tab 6**.

12 *Id*.

13 DTSC Response to Comments, June 19, 2007 at p.19, attached as **Tab 7**.

Equally disappointing, DTSC failed to reconsider its condition requiring CWM to reconstruct the Facility cover.

On June 19, 2007, DTSC rendered a final decision on the draft Post-Closure Permit for the Facility (the "Appealed Post-Closure Permit"). On July 19, 2007, CWM filed a Petition for Review of the Appealed Post-Closure Permit.[14] Continuing to cooperate with DTSC, CWM then undertook a series of additional technical studies requested by the Agency to determine whether hazardous wastes had, in fact, been disposed of at the Site, what its current waste characteristics are, and what, if any, risks any such waste would pose to human health and the environment.

2.4 Recent Technical Evaluations and Discussions with DTSC

Since July 2007, when CWM sought review of the Appealed Post-Closure Permit, DTSC asked CWM to undertake a number of detailed technical studies to corroborate that the Site is low risk, a view the Agency had already reached preliminarily:[15]

July 16, 2007	CWM met with DTSC Permitting Program to discuss future management of the Site. Wade Cornwall, senior program manager at DTSC, suggested that CWM pursue 'clean closure'.
July 2007	CWM began a 'Waste-In' study analyzing the wastes sent to the Facility for disposal during its active life.
October 2007	At the request of Wade Cornwall of DTSC, CWM undertook a Geophysical Survey of the Site to identify any buried drums.
October 15, 2007	CWM submitted a Draft Waste and Risk Characterization Work Plan, as

[14] Letter from Phil Perley (CWM) to Watson Gin (DTSC), July 19, 2007, attached as **Tab 8**.

[15] *See infra* Section 4.1.6.

	requested by DTSC.[16]
November 26, 2007	CWM submitted the Geophysical Survey Report to DTSC.
December 14, 2007	CWM submitted an initial draft of the Waste-In Report to DTSC.
February 7, 2008	CWM submitted a Final Waste-In Report to DTSC.[17]
February 7, 2008	CWM submitted a Waste Characterization Work Plan to DTSC, in the form requested by DTSC.
March 27, 2008	DTSC conditionally approved CWM's Waste Characterization Work Plan.[18]
April/May 2008	CWM began scheduling drillers for waste characterization work.
June 2008	CWM began waste characterization field work with a DTSC representative present during much of the sampling activities.

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[16] The work plan included random sample locations, as required by SW846. Wade Cornwell of DTSC asked that CWM *not* prepare a Risk Assessment for the Facility. Rather, DTSC wanted to review the raw analytical data collected as part of the Waste Characterization. DTSC also directed CWM not to collect random samples across the entire permitted area of the Facility, but instead to collect random samples primarily within the waste cells and at 5 foot intervals through waste. CWM complied with these requests. *See* Letter from Scott Ward (DTSC) to Phil Perley (CWM), December 6, 2007, attached as **Tab 9.**

[17] Preparing the Waste-In Report required the manual review of 342,764 records from DTSC's Generator Manifest Section archives on microfilm and 10,301 manifests from the Facility. This report concluded that, at most, approximately 0.23% of the waste sent to the Facility could have been considered characteristic (corrosive) waste, either D002 or D008, but was not so-designated by the generator on the manifest, or was shipped pre-RCRA. It is estimated that 99.76% or more of the documented waste accepted at the Facility was non-hazardous. *See* CWM Bakersfield Waste-In Report, prepared by Professional Environmental Group, submitted February 7, 2008, attached as **Tab 10**.

[18] Letter from Scott Ward (DTSC) to Phil Perley (CWM), March 27, 2008, attached as **Tab 11**.

November 4, 2008 CWM submitted a Final Waste Characterization Report[19] to DTSC and asked the Agency to approve 'clean closure' of the Site, completing formal obligations for RCRA post-closure care.

December 2008 CWM met with DTSC to discuss the Waste Characterization Report. DTSC asked CWM to prepare a Risk Assessment to confirm the Site was low risk, a view DTSC acknowledged in submissions to EPA.[20] Wade Cornwell stated that if the Risk Assessment demonstrated low risk, the Permitting Branch would prepare a memorandum to then Deputy Director Watson Gin recommending that DTSC oversight of the facility be terminated and oversight transferred exclusively to the Regional Water Quality Control Board, Central Valley Region ("Water Board"), which also regulates the Site.

January 2009 DTSC initiated a meeting with the Water Board and CWM to discuss the completion of all post-closure care requirements and possible transfer of regulatory oversight for the facility from DTSC to the Water Board. Risk Assessment work began shortly thereafter.

February 5 , 2009 CWM provided draft risk calculations to DTSC under the parties' agreement that CWM would perform a streamlined Risk Assessment.[21]

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[19] *See* Waste Characterization Report, prepared by AMEC Geomatrix, Inc., November 4, 2008, attached as **Tab 12**.

[20] *See infra* Section 4.2.1.

[21] *See* Letter from Phil Perley (CWM) to Dr. Brian Endlich (DTSC), enclosing Draft Human Health Risk Assessment Calculations, February 25, 2009, attached as **Tab 13**.

In the course of recent discussions with DTSC, CWM was told that if additional data confirmed that the Site was low risk, it would be transferred out of the RCRA program to the oversight of the Water Board. To do this, would necessarily *shorten* the post-closure period.

Since the filing of the appeal, CWM has not delayed in carrying out the work requested by the Agency. Rather, the company acted diligently, in good faith, and followed DTSC's directives. The Agency demanded complex technical studies to prove that the Site is low risk. CWM complied, at considerable expense. CWM took great care to conduct professional evaluations and to address each and every one of the substantive issues raised by DTSC. All of this took time. A significant body of information corroborates that the Site is low risk.

3. SUMMARY OF ARGUMENTS

3.1 Extension of the 30-Year Post-Closure Period is Not Warranted

DTSC lacks authority to extend the post-closure period beyond 30 years unless it makes specific findings that the action is necessary to protect human health and the environment. DTSC is authorized to extend the 30-year post-closure care period for good cause. But, under the regulations, the Agency can only do so if it makes ***findings*** based on ***evidence*** that indicates that an ***extension is necessary to protect human health and the environment***. To withstand judicial scrutiny, this finding must be supported by substantial evidence. In this case, extending the 30-year post-closure period is not warranted because:

a) **DTSC Has Not Met Its Burden Under the Regulations**. DTSC has not made any supportable findings that the Site contains hazardous waste, that harm to public health and the environment is occurring, or that any harm is likely to occur. Extensive recent studies actually show that the opposite conclusion is true.

b) **The Site is Low Risk.** All data and evidence from technical studies at the Site confirm that: (i) 99.76% or more of all waste accepted at the Site was non-hazardous; (ii) the Facility does not contain hazardous waste, as shown by extensive soil sampling; (iii) groundwater at the Site has no hazardous constituents; (iv) there are no human exposures; (v) the cover is performing as designed, meets Title 22 standards, and effectively prevents intrusion of rainwater into underlying (non-hazardous) wastes; and (vi) the Bakersfield Facility is a low risk site. Thus, there is no technical support for DTSC's proposal to extend the 30-year post-closure period at this Site. The Site received non-hazardous industrial waste and should probably never have been permitted or closed as a RCRA landfill.

c) **Lack of Proper Rulemaking.** DTSC has never adopted a regulation establishing a 100-year post-closure period in California. Nor has it adopted a regulation allowing it simply to roll the 30-year period forward each time a post-closure permit is renewed. DTSC's views that: (i) an extension of the 30-year post-closure period is automatically warranted upon permit renewal, and (ii) the 100-year engineering design standard for landfill cover equates to a 100-year post-closure permit period, are impermissible "underground" regulations. They should not be ratified by this tribunal.

3.2 Cost Estimate of Project Manager Time at 50% for 30 Years is Excessive

DTSC requires calculation of financial assurances based on a formula that assumes 50% of CWM's in-house project manager's time is spent on this Site for 30 years. This is erroneous and very far off the mark. CWM's Bakersfield Project Manager has averaged 17% of a full-time

position in managing all work activities at the Facility over the past four years. This percentage will continue to decline over time. The cost estimate for Project Manager time should reflect no more than 15% of a full-time position.

3.3 The Site Does Not Need a New Cover and Financial Assurances Based on a New Cover Could Not Be Calculated Until a New Cover Design Was Chosen

The Appealed Post-Closure Permit requires a re-calculation of financial assurances based on a redesigned cover. CWM has two responses. First, the Site does not need a re-engineered cover to prevent water from percolating into underlying wastes. And second, it is not possible to calculate financial assurances for a redesigned cover unless and until DTSC reviews and approves a new cover design. Only after the Agency approves a final cover design could an accurate construction estimate be developed, and financial assurance instruments prepared.

3.4 The Existing Cover is Performing Well

CWM objects to DTSC's request for a plan to reconstruct the Facility cover. CWM estimates that a new cover would cost in the range of $25 to $35 million dollars.[22] There is no justification for such an extraordinary expenditure at a low risk facility like Bakersfield. The cover installed in 1988-1989 is in good condition, is operating as designed, and meets current Title 22 performance standards. Extensive studies and modeling show that the cover is effectively preventing rainfall from percolating into underlying (non-hazardous) wastes, and will continue to do so in the future.

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[22] The "environmental cost" of reconstructing a new cover is also likely significant. CWM has calculated, in a manner consistent with Assembly Bill 32, greenhouse emissions that would be associated with installing a cover meeting the prescriptive standard required in the Appealed Post-Closure Permit and found that emissions would exceed 13,400 tons of total CO_2 (excluding emissions related to the manufacture of the required geomembrane and geotextile). These increased emissions are obviously avoided if the cover reconstruction requirement is deleted from the Appealed Post-Closure Permit.

3.5 Groundwater Data Show No Need to Extend Post-Closure Care

Groundwater data from 23 years of monitoring at the Facility do not support a finding that the 30-year post-closure care period should be extended.[23] The deep aquifer (Olcese sand) at the Site has not been contaminated. Neither the shallow nor deep aquifers at the Site are used for drinking water supplies, and both are of poor quality with naturally occurring high levels of total dissolved solids (TDS). The only contaminants of concern (COCs) found in groundwater are naturally occurring substances, principally sodium, sulfates and TDS. DTSC itself reported to federal EPA that the groundwater contains no hazardous constituents.[24] No COCs have migrated off-Site. And, except immediately beneath portions of the former active areas of the Site, COCs had attenuated to background levels by 1991. Leachate at the Site is disposed of as non-hazardous liquid. The Water Board made a specific finding that this is a 'low risk' site and that there is no evidence of impact to the downstream Poso Creek (Poso Creek alluvium).[25] Thus, extending the 30-year post-closure period is wholly unwarranted.

3.6 The 60-Day Deadline For Submittals Was Inadequate

There is no regulatory basis for the arbitrary 60-day deadlines DTSC imposed in the Appealed Post-Closure Permit requiring CWM to apply for clean closure or waste delisting, or submit plans for reconstruction of the cover. These deadlines fail to take into account the

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[23] *See* Second Semiannual and Annual 2008 Monitoring Report, prepared by AMEC Goematrix, Inc., February 26, 2009, attached as **Tab 14**.

[24] *See* Documentation of Environmental Indicator Determination Interim Final, February 5, 1999, attached as **Tab 15**; RCRA Corrective Action Environmental Indicator Forms Addendum, completed by Wade Cornwall (DTSC), Michael Choe (DTSC), Jennifer Wu (EPA), April 5, 2000, attached as **Tab 16**.

[25] California Regional Water Quality Control Board, Central Valley Region, Waste Discharge Requirements Order 99-08 (June 11, 1999) (hereinafter "Water Board Order 99-08"), attached as **Tab 17**.

amount of data that would need to be gathered and analyzed to prepare these submittals. The fact that CWM has not been able to meet these deadlines, despite the aggressive pace of technical investigation at this Site, is good evidence that the deadlines were unreasonable in the first instance.

3.7 Appeal Comment 5: Incorrect Owner/Operator Name on the Final Permit

Chemical Waste Management, Inc. and not Waste Management, Inc. should be identified on the cover page of the Appealed Post-Closure Permit as the owner and operator of the Site.

4. SUPPORTING STATEMENT OF REASONS

4.1 Appeal Comment 1(a): DTSC's Rolling Renewal of the 30-year Period is Contrary to Law

The federal and state RCRA regulations expressly establish a fixed 30-year period post-closure care period. They provide for a longer period, if necessary to protect human health and the environment. They also allow DTSC to shorten the post-closure period. The California regulations provide in pertinent part:

> Post-closure care for each hazardous waste management unit subject to the requirements of sections 66264.117 through 66264.120 shall begin after completion of closure of the unit and, except as provided in subsections (b)(2)(A) and (b)(2)(B), continue for ***30 years*** after that date …
>
> Any time … during the post-closure period for a particular unit, the Department shall, in accordance with the permit modification procedures in chapters 20 and 21 of this division . . . extend the post-closure care period applicable to the hazardous waste management unit or facility ***if the Department finds*** that the extended period ***is necessary to protect human health and the environment*** (e.g., leachate or groundwater monitoring results

> indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment).[26]

In developing the RCRA program, EPA established a fixed period of 30 years and placed the obligation on the government to justify care beyond that period.[27] EPA expressly rejected an approach that would have required post-closure care in perpetuity, unless the facility owner/operators could demonstrate that a shorter care period will protect human health and the environment. A 2001 report issued by the federal Inspector General makes this clear:

> "EPA could have initially written RCRA regulations requiring post-closure care in perpetuity, placing the burden of proof on the facilities to demonstrate that a reduction in care would not pose any threat to human health or the environment." [28]

This study by the Office of the Inspector General of the US EPA surveyed nine states, including California, and found that none of them had "developed a policy and process to determine whether post-closure care should be extended beyond 30 years." [29] At a minimum, this report indicates that federal EPA did not read the California regulations to establish a 100-year post-closure period for landfills.

4.1.1 DTSC Must Make a Finding Based on Substantial Evidence

Accordingly, DTSC must base any extension of the post-closure care period on a "***finding***" that such extension is **"*necessary to protect human health and the environment*."** To

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[26] 22 Cal. Code Reg. § 66264.117(b) (emphasis added); *see also* 40 C.F.R. § 264.117(a)(1).

[27] It is important to note that in both the federal and state regulations, it is the *agency* that has the burden of making a reasoned determination for an extension of the post-closure period.

[28] *See* EPA, Office of Inspector General, "*Audit Report: RCRA Financial Assurance for Closure and Post-Closure*" 2001-P-007 at 41 (March 30, 2001).

[29] *Id*.

withstand judicial scrutiny, this finding must be supported by substantial evidence.[30] The dictionary definition of "finding" is "*a conclusion reached after examination or investigation.*" [31] A legal definition of "finding" is "*a determination by a judge, jury or administrative agency supported by the evidence in the record.*"[32] To make a finding about whether a particular landfill requires extended post-closure care obviously requires a careful consideration of the facts. "Findings of fact" are "*determinations from the evidence of a case, either by court or an administrative agency*" or "*a conclusion by way of reasonable inference from the evidence*." *Id.*

4.1.2 Longer than 30 Years is a Severe Economic Burden to Site Operators

In setting a benchmark of 30 years as a period of post-closure care, EPA was well aware of the burdens it was placing on businesses responsible for long-term stewardship of closed sites. To extend that period, EPA (or a delegated state) must make a technically supportable finding, based on sound evidence and accepted science.

When DTSC explained why it was proposing to extend the 30-year post-closure care period for the Bakersfield Facility in 2004, it stated that it was doing so "*based on the nature of the waste that will remain in [sic] at the site in perpetuity*."[33] Under the regulations, however, any extension must be based on objective *site specific* evidence of a threat to human health or the environment. As discussed in detail below, there is no such evidence here. In fact, the data collected over the past decades establish that Bakersfield is a low risk site, that its cover is

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30 *See, e.g.*, *Fukuda v. City of Angels*, 20 Cal.4th 805, 824 (1999); *Desmond v. County of Contra Costa,* 21 Cal. App. 4th 330, 335 (1993) (". . . we must examine the findings made by the Board itself to determine whether they were supported by substantial evidence . . .").

31 *See* American Heritage Dictionary of the English Language (Internet Edition, 2000).

32 *See* Black's Law Dictionary (1999).

33 *See* **Tab 3**, Letter from Barbara Coler (DTSC) to Charles White (CWM).

operating effectively, that wastes and leachate at the Site are not hazardous, and that its groundwater has no hazardous constituents.

4.1.3 Summary of DTSC vs. CWM Positions

In the 2006 draft of the Appealed Post-Closure Permit, DTSC offered reasons for seeking to extend the post-closure period. CWM's response to each point was timely submitted to DTSC in its Petition for Review - Supplemental Brief dated February 25, 2008,[34] as excerpted below:

- **Issue:** "Disposed hazardous wastes have not likely degraded since the Facility's closure, and will not likely degrade in a 30-year time period from 2006."
    - **CWM Response:** There is no requirement in RCRA that wastes degrade by the end of the period of formal post-closure care. If this were true, every landfill in the United States would have more than 30-year post-closure permits, which is not the case and not the intent of the policymakers who adopted the regulations.
- **Issue:** "The burden of costs associated with maintaining the Facility will default to the California taxpayers should post-closure care be allowed to cease."
    - **CWM Response:** This is wholly inaccurate. Ending a post-closure period, does not transfer ownership or responsibility for a facility to the State of California or its taxpayers.
- **Issue:** "Long-term neglect of post-closure care may also result in Facility deterioration which leads to hazardous wastes washing from the Facility into Poso Creek, which could impact several downstream environmental receptors. The Kern National Wildlife Refuge is the final discharge point for Poso Creek. Poso Creek is located just south of the Facility as shown in Figure 2."
    - **CWM Response:** These statements are entirely speculative and unsupported by any evidence.

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[34] *See* CWM Petition for Review, Supplemental Brief, submitted February 25, 2008, attached as **Tab 18**.

4.1.4 There is No Objective Evidence of Harm

DTSC's reasons for now seeking to extend the post-closure care period clearly do not satisfy the regulatory standard. The evidence demonstrates that the Site does not pose a threat to human health or the environment, and DTSC has admitted as much.[35]

In 2006, when DTSC issued the draft Post-Closure Permit, the Site was approximately 18 years into its 30-year post-closure care period. At best, it was premature for DTSC to 'guess' that the post-closure period might need to be extended. At worst, DTSC has willfully ignored a substantial body of evidence showing that it has no basis to seek an extension. In fact, a shortening of the post-closure care period[36] is likely more appropriate. Nowhere in the Appealed Post-Closure Permit documents does DTSC actually "find" that exposure is occurring or will occur unless the post-closure period is extended. Moreover, nowhere does DTSC actually identify the specific harm to which human or environmental receptors might be exposed.

DTSC comments, in the Appealed Post Closure Permit, on perceived maintenance issues with the cover and the quantity of leachate the Facility produces. As discussed in Section 4.4 below, the cover is operating as designed and meets current performance standards. Notably,

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[35] For example, in submissions to U.S. EPA, DTSC has reported that "current human exposure pathways are under control" and that Site groundwater and groundwater discharge was not contaminated and that "migration of groundwater [is] under control" and had been verified. *See* **Tab 15**, Documentation of Environmental Indicator Determination Interim Final; **Tab 16**, RCRA Corrective Action Environmental Indicator Forms Addendum. Moreover, DTSC's own technical experts have concluded that stable or decreasing trends in groundwater impacts have been observed since implementation of corrective measures during closure. *See* Comprehensive Groundwater Monitoring Evaluation Report, dated September 3, 2002, attached as **Tab 19**.

[36] 22 Cal. Code Reg. § 66264.117 (b)(2)(A).

DTSC does not discuss the quality of the leachate.[37] The Site generates modest amounts of leachate which are periodically pumped out and removed off-Site. These liquids are sent to Kettleman Hills for disposal. Analytical testing confirms that they are non-hazardous. Nor has DTSC presented any evidence that leachate from the Facility is impacting downstream receptors.[38]

In short, DTSC's "findings" were not supported by evidence. They amount to no more than speculation that because of perceived maintenance issues with the cover and the amount of leachate generated from the Facility, the Site might pose a threat to human health or the environment. That speculation has been superseded by substantial technical evidence. DTSC's statements in the Appealed Post-Closure Permit do not constitute the technical "investigation and examination" required to determine that there is cause to extend the post-closure period.

Having provided no objective evidence that the Site poses a risk to human health or the environment, DTSC has failed to justify its decision to extend the 30-year post-closure care period. Accordingly, a reviewing court is likely to view this decision as an arbitrary one.

4.1.5 The Facility is a Low Hazard, Stable Site

There is a simple reason why DTSC's findings do not support extending the post-closure care period: the data overwhelmingly demonstrate that the Facility does not present a threat to human health or the environment.

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[37] This is notable because the regulation governing when the Agency may extend the post-closure period specifically refers to leachate and groundwater monitoring results, migration of hazardous wastes, and harmful concentrations. 22 Cal. Code Reg. § 66264.117(b).

[38] The Water Board found that groundwater had not impacted the downstream Poso Creek alluvia and, on that basis, discontinued monitoring in that area. *See* **Tab 17**, Water Board Order 99-08.

There are over 20 years of data associated with monitoring, sampling, and other closure activities at the Site. The Site has been well studied and its physiographic setting and hydrogeology are well understood.

4.1.6 DTSC and Water Board Have Acknowledged the Site as Low Risk

Both DTSC (in reports filed with federal EPA) and the Water Board (in Order 99-088) have made specific, written findings and conclusions that the Site is low risk:

DTSC:

- "There are no known releases to groundwater subject to RCRA Corrective Action."[39]
- "Constituents known to exist in the groundwater are limited to sulfate, total dissolved solids (TDS) and arsenic- the latter of which is naturally occurring."[40]
- "Past groundwater monitoring data indicate there are no hazardous constituents."[41]
- Constituents of concern at the Site are "naturally occurring and, with some demonstration, could be attributed to natural spatial variability or other causes."[42]

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[39] DTSC senior staff made these statements in reports to EPA advising that the Site poses no significant risk to human health or the environment. *See* **Tab 15**, Documentation of Environmental Indicator Determination Interim Final, February 5, 1999 *formerly available at http://yosemite.epa.gov/r9/r9coract.nsf/0/f5a376a087f367ed88256ac5007cceb8/$FILE/Chem_Waste_Bakersfield_056_EI_00.PDF*.

[40] *See* **Tab 16**, RCRA Corrective Action Environmental Indicator Form, April 5, 2000 *formerly available at http://yosemite.epa.gov/r9/r9coract.nsf/92e28fb9e2f1a35a88256a72006760cb/f5a376a087f367ed88256ac5007cceb8/$FILE/Chem%20Waste%20Bakersfield%20056%20+%2000.pdf.*

[41] *Id*.

[42] *See* **Tab 19**, Comprehensive Groundwater Monitoring Evaluation Report for Chemical Waste Management, Inc. Bakersfield Facility, dated September 3, 2002.

DTSC has not retracted any of these statements. Nor has the Agency explained why it appears to be now taking a contrary view without any intervening evidence that its conclusions in these documents filed with federal EPA were wrong.

For its part, the Water Board has also determined that the Site is low risk with respect to any groundwater contamination:

> **Water Board:**
>
> - "The closure of the waste management units with waste left in place will protect water quality and the beneficial uses designated for the surface water or groundwater beneath this site."[43]
>
> - "The groundwater pollutant plume is limited to a small area within the weathered Round Mountain Silt, and concentrations in the affected wells have been steadily declining. In addition, groundwater in the weathered Round Mountain Silt qualifies for an exception under the Sources of Drinking Water policy in the Basin Plan due to its poor quality."[44]
>
> - **"**Water in the relatively good-quality aquifers in the Poso Creek Alluvium [Poso Creek sediment] and in the Olcese Sand [deep aquifer] is unimpacted. Due to the low risk associated with the site and the potentially high cost of remediation, the proposed corrective action of periodic pumping from the northwest canyon sump and groundwater monitoring appear to be appropriate."[45]
>
> - "Groundwater in the Round Mountain Silt is of poor quality, and, according to the criteria contained in the Basin Plan, meets the criteria for consideration of exemption from the MUN beneficial use designation."[46]

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43 *See* **Tab 17**, Water Board Order 99-08.

44 *Id.*

45 *Id*.

46 *Id*.

In the face of the above admissions and acknowledgments, and DTSC's request that it meet with CWM and the Water Board to discuss transferring the Site to the Water Board for regulatory oversight, CWM questions how DTSC can credibly argue that the Site poses a risk to human health and the environment sufficient to warrant a period beyond 30 years, much less a 100-year post closure period.

4.1.7 Leachate and Groundwater Are Not Hazardous

Groundwater data from 23 years of monitoring at the Site show that no hazardous constituents are present. Groundwater and leachate are regularly sampled. The only COCs are non-hazardous constituents, primarily sulfates, sodium and TDS. No volatile organic compounds, pesticides, herbicides, PCBs, dioxin, furan, or anthropogenic heavy metals have been reported.

4.1.8 Site Wastes are Not Hazardous

Extensive soil sampling performed in 2008 showed that Site wastes are not hazardous. [47] Of 238 waste samples collected, only 6 exhibited possible hazardous characteristics. Of those 6, 1 (sulfide) is 40 feet below ground surface, 3 (lead) are 35 feet below ground surface, and the other 2 are shallow, but the analytical data are suspect, due to QA/QC concerns. More important, using waste sampling statistical protocols required by DTSC regulations, outlying data points are excluded through the use of an upper confidence limit ("UCL") calculation.[48] Using this UCL methodology, the waste at the Site is not hazardous. These results are not surprising as little or no hazardous waste was accepted at the Site. There is no technical justification for managing the Site as a RCRA hazardous waste landfill.

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[47] *See* **Tab 12**, Waste Characterization Report.

[48] *See* 22 Cal. Code Reg. § 66261.20(c).

4.1.9 99.76% or More of Waste Received at the Site Was Non-Hazardous

At DTSC's request, CWM prepared a 'Waste-In' report analyzing all the manifests of wastes received at the Facility.[49] This required a manual review of 342,764 records from DTSC's microfiche archives and more than 10,301 manifests at the Facility. The Waste-In Report concluded that ***99.76 % of the documented waste accepted at the Facility was clearly non-hazardous***.[50]

Three shipments of waste accepted at the Facility, comprising ***0.006%*** of the documented waste, could have been considered to be listed K051 waste, but were not so designated by the generator.[51]

Approximately ***0.23%*** of the documented waste, could have been considered characteristic (corrosive) waste, either D002 or D008, but was not so-designated by the generator on the manifest, or was shipped pre-RCRA.[52] These liquid wastes were placed into the Site ponds and, when mixed with the existing liquid in the ponds, were fully neutralized (thus no longer corrosive). The liquids in the ponds evaporated leaving a solid waste sludge that was placed into the Site landfills. CWM collected 238 samples from the Facility for a waste

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[49] *See* **Tab 10**, Waste-In Report.

[50] CWM's consultant reviewed documentation for material not designated as hazardous waste by generators on original manifests, but appear to have been hazardous material based on descriptions provided in transportation documents (e.g., corrosive waste, lead waste and API separator sludge waste). If all such material is treated as hazardous for the study's purposes, the total non-hazardous waste received by the Facility would be 99.745% and the total percentage of potentially hazardous waste sent to the Facility would be 0.255% (consisting of 0.23% corrosive waste, 0.019% lead waste, and 0.006% API separator sludge waste).

[51] The generator manifested the waste as a Hazardous Waste Liquid, N.O.S. under U.S. Department of Transportation (DOT) regulations

[52] *See* **Tab 10,** Waste-In Report.

characterization.[53] These samples were tested for pH and all the analytical results confirm that Site soils are non-hazardous for corrosivity.

In sum, there is no body of evidence (and DTSC has not pointed to any) to support a finding to extend the post-closure care period beyond the initial 30-year period on the grounds that the Site poses a threat to human health and the environment. To the contrary, the studies suggest that the Site probably should never have been closed as a hazardous waste landfill and that its post-closure care period can be shortened.

4.1.10 DTSC Cannot "Re-Start" the 30-Year Post-Closure Period Each Time a Post-Closure Permit Expires

The California post-closure regulations are based on the federal regulations developed by EPA. In developing the 30-year post-closure care period, EPA expressly rejected a longer or even perpetual post-closure care period.

In its proposed rule, EPA proposed that post-closure care be conducted for 20 years. Some commenters suggested that this was too short a period and that post-closure activities should be carried out perpetually; others suggested the period was too long. As a result of the extensive comments, EPA reconsidered its proposal. In an interim final rule, EPA decided to extend the post-closure care period from 20 to 30 years.[54] However, the permit process was to provide for a "***case-by-case review of the period for post-closure care***" with the agency able to shorten or extend the 30-year period "***as appropriate on a case-by-case basis.***"[55] The

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53 *Id*.

54 *Id.*

55 *Id.* at 33,197 (emphasis added).

regulations allow the agency "***to extend some or all of the post-closure care requirements for cause, e.g., because contamination is detected or feared imminent.***"[56]

For DTSC to adopt a policy of automatically rolling forward all 30-year post-closure periods, without factual evidence supporting any need on a case-by-case-basis, is contrary to law. It undermines the careful balancing of interests that EPA undertook when it adopted the post-closure regulations, after extensive public comment. It is particularly egregious here, where there is no evidence of harm to public health or the environment.

EPA addressed the 30-year period again in 1981, when it clarified certain provisions. [57] The major issue in this section of the rulemaking again was the 30-year post-closure care period. Commenters again were concerned that the period was too long or too short. After consideration of these comments, EPA retained the 30-year period, but clarified the procedure available for extending or shortening the initial 30-year period:

> ***[I]f after 30 years of post-closure care, it is demonstrated that additional groundwater monitoring or other care is necessary to protect human health and the environment, the [new] procedures . . . allow the period to be extended.*** Similarly, if ***at any time*** during the post-closure period it is demonstrated that further care is ***not necessary to protect human health and the environment, the period may be shortened***.[58]

One commenter suggested that noncompliance with post-closure standards should be a basis for extending the post-closure period. EPA rejected this suggestion, stating that mere noncompliance (i.e., the *potential* for environmental harm) was not an appropriate basis to

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56 *Id.* (emphasis added).

57 *See* 46 Fed. Reg. 2801, 2818 (January 12, 1981).

58 *Id.* at 2819 (emphasis added).

extend the period and that "***an extension should be based only on relevant environmental factors*** . . ."[59]

4.1.11 DTSC's Decision to Extend the Post-Closure Period is Premature

The overwhelming technical evidence shows that waste present at the Site is not hazardous and that Bakersfield is a low-risk site. In 2006, when DTSC issued the draft Post-Closure Permit, the Site was approximately 18 years into a 30-year post-closure care period. It was wholly premature to even consider an extension at that point in time. EPA has explained that extensions of post-closure care are properly made in the *"last few years of the post-closure period."*[60]

EPA addressed this issue in 1982, when the State of Oklahoma was seeking a delegation of the RCRA program. EPA found that Oklahoma's regulations conflicted with federal requirements because the state tried to limit the post-closure period to "not more than 30 years as determined by the Department at the time of issuance of the permit."[61] EPA objected to this formulation as less stringent than the federal standard. It noted that federal law allows the Agency "prior to the time that the post-closure period is due to expire" to "extend the post-closure care period if [it] finds that the extended period is necessary to protect human health or the environment." [62] EPA stated:

> Ordinarily, such a gap would preclude the authorization of the State. Oklahoma, however, has made the argument, and EPA agrees, that the State's program is equivalent to EPA's with the exception of extending the 30 year post-closure care period that the

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59 *Id.* at 2820 (emphasis added).

60 49 Fed. Reg. 50,362, *supra.*

61 *Id.*

62 *Id.*

> *authority to require the extension of post-closure care period would not be needed until the last few years of the 30-year period*…There will be a significant amount of time before the State would be required to exercise the authority to extend a post-closure care period… [63]

EPA, therefore, expected that extensions of post-closure care would properly be made near the end of the 30-year period. This is logical because any determination made prematurely might be superseded by changed conditions toward the end of the 30-year period.

It would be wasteful of resources – both private and public – to engage in speculative debates and studies early on in the post-closure period, only to undertake that same analysis all over again as the period comes to a close. If some significant condition is identified in year 10 or 15, the appropriate response is to make technical adjustments in the post-closure plan, to address the problem in real time.

Thus the law, common sense and public policy dictate that extensions of post-closure care should be considered near the end of the 30-year period established by the state and federal RCRA regulations and not halfway through. Given the low-risk nature of the Bakersfield Site, it was especially inappropriate to publish a new permit that simply rolled forward the 30-year period, apparently over an intended 100-year horizon, with the attendant burden of monitoring and financial assurances on the Site operator.

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63 *Id*.

4.1.12 DTSC's Argument that the 100-Year Design Standard Creates a 100-Year Post-Closure Care Period Is Not Supported In Law

DTSC suggested in a 2004 letter to CWM that California law sets a 100-year post-closure period.[64] In this letter, DTSC refers to DTSC regulations that require engineering design specifications for surface impoundments and landfills to include an integrity life-span of 100 years. Citing no authority, DTSC argues that this creates a 100-year post-closure period standard. CWM emphatically disagrees.

RCRA rulemaking history clearly shows that EPA intended to create a 30-year post-closure period standard. As this tribunal is aware, California's regulations on the 30-year post-closure period are substantially identical to the federal regulations; the guidance set forth in the federal RCRA preambles is therefore authoritative.

If DTSC had intended to adopt a 100-year post-closure standard, it would not have done so obliquely, by burying the requirement in what is clearly an engineering design standard. Many regulations establish design standards. RCRA has design standards specifying a duration for cover on a landfill. The state building codes establish design standards for seismic safety and durability of structures. These design standards often prescribe a period of time for structural integrity. But design standards do not translate into permit periods where substantial commitments of funds and financial assurances are required. To suggest otherwise is not credible, and is not supported by the plain language of the regulations. And the fact that DTSC has not been able to provide a single example of a site where DTSC has imposed a 100-year post-closure period, suggests that the Agency is not applying this interpretation consistently.[65]

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64 *See* **Tab 4**, Letter from Wade Cornwall (DTSC) to Christopher Cullison (CWM).

65 *See id*.

4.1.13 The Administrative Procedures Act Prevents DTSC From Enforcing a 100-Year Post-Closure Period Without Notice and Comment Rulemaking

The state Administrative Procedures Act prohibits any state agency from enforcing any rule of general application unless adopted as a regulation and filed with the Secretary of State.[66] This is an important procedural protection to California businesses and citizens. If DTSC wishes to adopt more stringent hazardous waste regulations that require perpetual care or set a 100-year post-closure period, it can do so. But, it must go through the public process of rulemaking, which allows for participation by all stakeholders.

Changing the standard from 30 years to 100 years in California would be a dramatic departure from established state and federal policy. Such a change would have a tremendous impact on the businesses responsible for long-term care of RCRA facilities. It would disrupt the settled expectations and complex business decisions made on the basis of the existing and codified standard of 30 years of post-closure care.

As a matter of law and procedural fairness, DTSC cannot implement a policy shift of this magnitude without providing the public, and in particular the affected businesses, formal notice of the policy change and an opportunity to be heard on the issue of post-closure care.[67]

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[66] Cal. Gov. Code §§ 11340.5 *et seq*.

[67] DTSC should consider developing detailed procedures and technically-based criteria for determining whether a landfill requires extended post-closure care beyond the 30-year benchmark period. CWM, other site operators, local agencies and public interest groups would likely be interested in participating in the development of these standards. Once adopted, these criteria could then be applied at the appropriate time to decisions made at individual sites, such as the Bakersfield site, using a performance-based approach to assessing risks to health or the environment.

4.2 Appeal Comment 1(d): The Financial Assurances Cost Estimate Based on Project Manager Time at 50 % for 30 years is Excessive

DTSC requires calculation of financial assurances based on a formula that assumes 50% of CWM's in-house project manager's time is spent on this Site for 30 years. This assumption is wholly erroneous, as to the Bakersfield Facility. CWM's Bakersfield Project Manager has averaged only 17% of a full time position (equal to about 30 hours per month), managing all work activities at the Facility for the last four years. This work has included managing and preparing the 2005 and 2007 permit applications; responding to the permit applications; managing the Permit Appeal; and routine reporting and facility operations and maintenance. CWM expects routine management at the Facility to diminish with time, particularly after the July 2006, Site-Specific Water Quality Monitoring Plan is approved by DTSC.[68]

For purposes of financial assurances calculations, Site Project Manager time should be reduced to no more than 15% of a full-time position.

4.3 Appeal Comment 1(f): The Cover Does Not Need to Be Replaced; In Any Event Financial Assurances for a New Cover Could Not Be Calculated Until DTSC Approves a Cover Design

The Appealed Post-Closure Permit requires CWM to "[s]ubmit engineering plans and specifications to reconstruct the closure cover to original design specification that meet regulatory requirements."[69] These plans are due 90 days from the effective date of the permit.

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[68] Future management activities will include: routine facility O&M work (fence and road maintenance); cover integrity inspection and repair; well and sump repair; groundwater sampling; routine and non-routine inspections (including the annual third-party Facility inspection); and groundwater sampling and reporting.

[69] Appealed Post-Closure Permit, Part V.3.b.

The revised cost estimate and financial assurance for cover reconstruction are due 60 days from the effective date of the permit.[70]

These issues are moot because the existing cover is performing effectively and there is no need to rebuild it. However, if the Permit Appeals Officer does not find this matter moot, he should still consider that the submission times DTSC proposed are in conflict. A cost estimate for the cover cannot be developed until the cover design is completed and approved by the Agency. These deadlines are unachievable, on their face.

The entire requirement for a new cover should be deleted from the post-closure permit. If it is not, at a minimum, the last sentence in Part V.3.c. should be revised to read: *The revised cost estimate and financial assurance for cover reconstruction shall be submitted within 60 days of Agency approval of the final cover design.*

4.4 Appeal Comments 2(a) through 2(e): The Existing Landfill Closure Cover is Adequate and is Performing Well

The Appealed Post-Closure Permit requires CWM to rebuild or install an entirely new cover on the Bakersfield Facility. CWM estimates that the new cover reconstruction would cost in excess of $25 million, and perhaps as much as $35 million. There is no justification for such an extraordinary expenditure on a landfill where 99.76% or more of the waste received was non-hazardous, where the groundwater has no hazardous constituents, where no hazardous waste remains onsite, where there are no human exposures, and where monitoring data and modeling show that the Facility cover is in good condition and acting to prevent percolation of rainfall into underlying (non-hazardous) wastes.

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[70] Appealed Post-Closure Permit, Part V.3.c.

CWM has demonstrated that the cover installed on the Bakersfield Site in 1987 is operating as designed, and meets current performance standards under 22 Cal. Code Reg. § 66264.310.

The closure performance standard specified in the DTSC regulations for hazardous waste treatment, storage and disposal facilities is this:

> *"The owner or operator shall close the facility in a manner that … **controls, minimizes or eliminates, to the extent necessary to protect human health and the environment**, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or runoff, or waste decomposition products to the ground or surface waters or to the atmosphere."* [71]

Additional details for closure of landfills are set forth at 22 Cal. Code Reg. § 66264.310, consistent with this over-arching performance standard. Although DTSC has argued that the "existing cover is not effective in preventing rainfall from entering the waste or sustaining damage from weathering and animal activity," it has presented no objective evidence to refute CWM's studies that show otherwise. Nor is it reasonable to infer that the requirement to "prevent the downward entry of water into the closed landfill throughout a period of at least 100 years"[72] means that no molecule of water can move into underlying wastes; such a standard is unachievable by any technology, including the current design standards that would apply to a landfill constructed in 2009.[73]

Technical analysis and monitoring data demonstrate that the cover is in good condition and that satisfies each of the performance standards set forth in 22 Cal. Code Reg. § 66264.310 as follows:

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71 22 Cal. Code Reg. § 66264.111(b).

72 22 Cal. Code Reg. § 66264.310(a)(1).

73 22 Cal. Code Reg. § 66264.301 (Landfills; Design and Operating Requirements).

4.4.1 The Cover Prevents Downward Entry of Water into Closed Disposal Areas for a Period of at Least 100 Years

In June 1987, DHS approved the Facility Closure Plan. This plan required the installation of a closure cover containing a minimum of 18 inches of compacted clay and 15 inches of top soil over all disposal areas. On March 31, 1989, DHS certified that the closure plan had been properly constructed and the Facility Closure Plan implemented, per design. Data obtained from soil moisture monitoring stations within the cover of ponds P1, P2 and P5 at the Site, and supported by a Site meteorological station, reveal no percolation of meteoric water through the cover.[74]

4.4.2 Cracks in the Cover Have Not Caused Infiltration

Some degree of desiccation cracking and biointrusion on the cover has been noted by CWM in the past.[75] None of the observed cracks or burrows, however, extend below the clay liner into waste material. And because of the relatively shallow depth of cracks observed and the dry climate conditions, these near surface flow paths do not allow flux through the cover, and are not expected to do so in the future.[76] This conclusion is confirmed by the soil moisture monitoring performed at the Site.[77]

4.4.3 Vector Control Has Been Adequate

Probes were installed in the moisture monitoring station in Pond P-1 to detect moisture short circuiting in the event of animal burrowing. To date there has been no evidence of animal

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[74] CWM installed soil moisture monitoring sensors at approximately 6, 12, 18, 28 and 38 inches below the ground surface. *See* ET Cover Performance and Leachate Source Evaluation Report ("Cover Performance Report"), March 17, 2009, attached as **Tab 20**.

[75] CWM acknowledges that cracks and animal burrows were observed during the July 1989 and December inspections.

[76] *See* **Tab 20**, Cover Performance Report.

[77] *Id.*

burrows promoting preferential flow at this location, nor any evidence of animals coming into contact with waste material beneath the clay liner.[78] The data show that there has not been any detected increase in soil moisture in any of the deeper probes even following several precipitation events in November 2008 through mid February of 2009.[79]

4.4.4 The Cover Has Performed Well During Dry Conditions and High Rainfall

Instrumentation at the Site has provided data from November 2007 through January 2009, which included some periods of low rainfall. There has been no indication of detrimental increases in hydraulic conductivity with decreased moisture content.[80] There have been periods of significant rainfall that have provided additional data to assess the performance of the cover in rain conditions. These measurements show that the lower compacted clay layer appears to have relatively constant soil moisture. The consistent moisture content is evidenced by the fact that the soil moisture at a given depth on January 1, 2008 is about the same as that on January 1, 2009, when the ambient temperatures are relatively the same.[81] Thus the probes have measured no flux through the cover system to date.

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[78] *See* Bakersfield Facility Closure Cap Repair Maintenance Memorandum, dated November 27, 2007. This may be in part due to the animal burrowing investigation and eradication program implemented by CWM in November 2007.

[79] Animal burrowing often does not necessarily cause preferential flow because of how these burrows are often constructed. They are typically mounded to prevent run-in by surface water and angled to prevent precipitation from directly entering the holes. A practical way to look at it is that animals are very effective at building homes to raise their young that are safe from preferential flow that could drown their offspring. *See* **Tab 20**, Cover Performance Report.

[80] *See* CWM Comments to draft Appealed Post-Closure Permit, figure 5 (August 31, 2006).

[81] The probes have experienced some minor fluctuation related to seasonal soil temperature variations and therefore interpretation of the data must be made on a consistent basis given these soil temperature fluctuations.

4.4.5 Modeling Shows the Cover Will Continue to Perform Well

Modeling and monitoring results show that there is no water reaching the waste through the cover.[82] Predictive modeling of cover performance indicates that no rainwater will enter the waste, and the cover will continue to perform effectively, for at least the next 100 years.[83]

Importantly, the cover does not contain any synthetic or geosynthetic components (e.g., a geomembrane or geotextile) that commonly have finite life expectancies. In addition, the Facility's cover is comprised of soils that are well-suited for supporting native grasses at the Site. Field observations at the Site have shown that these native grasses are themselves effective at mitigating soil erosion caused by wind and surface runoff. As a result, the soil and grass portions of the cover are not likely to degrade significantly over the long term and the cover is expected to continue containing waste at the Site for at least 100 years.

4.4.6 The Cover Functions with Minimum Maintenance

Groundwater data from the Site indicate that the cover is effectively preventing the flow of water through the cover into the (non-hazardous) waste underneath. The cover has been performing well with minimum maintenance. Over the course of the last 20 years, for example, an independent engineer has performed 22 inspections of the Site.[84] Following these inspections, the engineer has typically recommended fairly simple maintenance work, such as repairing the Site fence and labeling a groundwater well.[85] Because the cover is performing effectively, CWM

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82 *See* **Tab 20**, Cover Performance Report.

83 *See id* at Attachment G.

84 *See* CWM Bakersfield Post-Closure Inspection 2008, prepared by Centra Consulting, dated September 19, 2008, attached as **Tab 21**.

85 *See, e.g., id*. at 6-14.

anticipates that future maintenance will continue to ensure effective cover performance, and will be similar in degree to maintenance performed to date.

4.4.7 Promotes Drainage and Minimizes Erosion

No ponding water or detrimental erosion has been observed on the cover.[86] Annual surveys of the cover have not indicated substantial subsidence that would result in potential ponding conditions.[87] Although some erosion and drainage issues have been observed at the Site during past site inspections, none of those observations involved the cover.[88] The vegetative layer of the cover promotes drainage and prevents detrimental erosion. As a result, ponding has not been observed at the Site, even during periods of significant rainfall.[89]

4.4.8 Accommodates Settling and Subsidence

During closure construction work, contained wastes were stabilized by blending waste with dry material and mixing cement into the waste. Borings drilled into Ponds P-1, P-2 and P-5 encountered hard, dense material that would not settle.[90] This fact is evidenced by the high blow-counts encountered in the field while drilling.[91] The cover, therefore, is not expected to experience differential settlement and thus ponding on the surface is not expected.

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86 *See id*.

87 *Id*.

88 Past erosion and drainage issues involved stressed or dead vegetation resulting from low rainfall and drought conditions at the Site.

89 *See* Closure Cap Repair Maintenance Memorandum, March 19, 1991 and Rainstorm Report, attached as **Tab 22**.

90 *See* **Tab 20**, Cover Performance Report.

91 Blow counts are the number of blows from a standard drive hammer that it takes to advance a specific sampler a certain distance into the material.

4.4.9 The Cover Accommodates Lateral and Vertical Shear Forces Generated by the Maximum Credible Earthquake

Because the cover is composed of soil material and because slopes on the cover are relatively mild, any seismic activity will not detrimentally affect the cover. At most, any such activity would result in nuisance failures; and any such movement would be observable from the surface. Covers composed only of soil materials are also more flexible than covers that incorporate geosynthetic materials. Increased flexibility also makes the Bakersfield cover more resistant to damage from seismic activity.

CWM notes that cover composed of geomembrane materials, unlike the Bakersfield closure cover, typically have lower shear strengths at the interface between the geomembrane and the adjacent soil layers and are susceptible to damage due to seismic activity.[92]

4.4.10 The Cover Has a Permeability Less than or Equal to the Permeability of any Bottom Liner System or Naturally Occurring Subsoils

The Facility's cover meets the performance closure standards in 22 Cal. Code Reg. 66264.310. Both monitoring results and modeling results show that there is no water moving from the cover system into the underlying (non-hazardous) wastes. Therefore, it meets the functional requirements of 22 Cal. Code Reg. § 66264.310(a)(6). [93]

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[92] See **Tab 20**, Cover Performance Report.

[93] *See* DTSC Response to Comments at 17 of 93. ("*DTSC considers the de facto components of a cover meeting title 22, section 66264.310 requirements to include: a low hydraulic conductivity layer consisting of 4 inches of compacted clay and a geomembrane of a minimum thickness of 60 mil, a drainage layer, a biotic barrier layer, and a top soil layer of at least 24 inches. However, covers using alternative components may also be acceptable if it can be demonstrated that they are equivalent in their ability to prevent moisture from penetrating through the cover system.*" We do know the source of DTSC's 'de facto' standard, and do not agree it could be compelled at a site closed in 1987, but in any event, the Site's cover meets it, by equivalency.

4.4.11 Conclusion: The Cover is Performing Well. There is No Need to Replace It

The Facility stopped receiving wastes in 1985. In 1987, DHS approved the Closure Plan, which included the design of a cover. In 1989, DHS certified that the closure construction was properly completed. Since then, data collected from the Site and modeling overwhelmingly demonstrate that the cover is performing as designed, that it is in good condition, that it is effectively preventing intrusion of rainwater into underlying wastes, that it will continue to do so for a projected 100 years, and that it meets or exceeds regulatory standards in effect today. Absent evidence of a significant environmental or public health problem, DTSC cannot now retroactively order that a new cover, costing in excess of $25 million -- and as much as $35 million -- be put on an existing, low risk, non-hazardous landfill.

4.4.12 The Design Standard for the Closure Cover is 100 Years, Which is Not a Financial Assurance Standard

California law, like the federal RCRA regulations, requires financial assurances for hazardous waste landfills.[94] The amount of financial assurances is calculated based on the post-closure cost estimates.[95] Post-closure cost estimates and financial assurance provisions provide for changes to the post-closure cost estimate due to inflation, but only "during the active life of the facility." The regulations make no reference to changes occurring *after closure* that affect post-closure costs, or to changes precipitated by an extension of the 30-year period or any other amendment to the post-closure plan.

Early interpretative language from EPA suggests that this limited focus reflects the rationale that because the economic value of the facility is "diminished or extinguished" post

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94 22 Cal. Code Reg. § 66264.145.

95 22 Cal. Code Reg. § 66264.144.

closure, funds for post-closure care must be secured "during the active life of the facility."[96] By adopting the federal equivalent of these regulations, it appears that it was DTSC's general intention to provide for adjustments to post-closure financial assurance mechanisms only during the active life of the facility. Once the active life of the facility ends, the obligation for further adjustment to financial assurance mechanisms ends as well.

Whether by EPA intent, or omission, the regulations make absolutely no provision for adjusting the post-closure cost estimate or financial assurances *after* the active life of the facility has ended and the post-closure period has begun. In addition, neither the 30-year extension provisions, nor the provisions governing the amendment of post-closure plans, reference the need for corresponding adjustments to the operator's financial assurances. Therefore, there appears to be no regulatory authority for DTSC to require the new post-closure cost estimates and financial assurance adjustments it has requested of CWM.

Assuming *arguendo*, that DTSC possessed the authority to modify financial assurance requirements as proposed, it would only be able to do so in accordance with a legitimately authorized extension of the 30-year period (i.e., supported by a finding as discussed above) reflected in an appropriately modified monitoring plan and in an adjusted post-closure cost estimate. Having made no such findings, DTSC has no authority to modify the Facility's financial assurance requirements.

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[96] 45 Fed. Reg. 33,260 (May 19, 1980) (revision of proposed rules – financial requirements).

4.5 Appeal Comments 3(a) through 3(c): Groundwater Data

4.5.1 DTSC Disregarded Important Groundwater Data

In order to extend the post-closure care period, DTSC *must* find that the extended period is necessary to protect human health and the environment. One basis for such a finding is when "leachate or ground-water monitoring results indicate a potential for migration of hazardous wastes at levels which may be harmful to human health and the environment."[97] However, this is not the case at the Site.

Instead of addressing specific groundwater data, in its Response to Comments, DTSC's refers very generally to "[m]eteorological and leachate removal data collected during and following the 1998 water year [that] indicate that the CWM Bakersfield cover does not meet the standards of preventing downward entry of water into closed areas for a period of at least 100 years as required by California Code of Regulations, title 22, section 66264.310." DTSC's findings further stated:

> "[M]eteorological and leachate removal data during and following the 1998 water year indicated that large amounts of rainfall during this time resulted in large amounts of leachate removal which indicates the closure cover does not meet the requirements of title 22, section 66264.310."

Merely referring to "large amounts" of rainfall and "large amounts" of leachate removal, however, is insufficient to meet the regulatory requirement of finding that "extending the period is necessary to protect human health and the environment."

Monitoring data indicate that the Facility has met and continues to meet the closure performance standards.[98] Monitoring data, for example, shows that the cover has prevented

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97 22 Cal. Code Reg. § 66264.117 (b)(2)(B)

98 22 Cal. Code Reg. § 66264.111 b.

meteoric water from percolating out of the bottom layer of the cover. Modeling has shown that the cover will continue to prevent water from percolating through the lower layer of the cover and into the underlying (non-hazardous) wastes, even under extreme conditions and over the long-term.

Samples obtained from the waste generally exhibited very low hydraulic conductivities.[99] Using the highest measured hydraulic conductivity (1.4×10^{-6} centimeters per second), neglecting the high value at the bottom of P2, it would take over 1,000 days for meteoric water to migrate through 10-feet of waste. Using specific hydraulic conductivity values obtained from P2 (1.5×10^{-7} to 6.6×10^{-9} centimeters per second) it would take over 10,000 to 200,000 days for water to migrate through the waste and into the collection sump.

Pressure transducer data provide further evidence that meteoric water is not percolating downward and into sumps. These data show no increasing depth of liquid in the sump and shows no correlation of the level of liquid in the sump with precipitation.

DTSC failed to consider other indicia for extending the post-closure period provided in 22 Cal. Code Reg. § 66264.117 (b)(2)(B) -- whether the leachate collected by the system *indicates a potential for migration of hazardous wastes at levels that may be harmful to human health and the environment*. Chemical analysis of the leachate at the Site reveals that it is not a hazardous waste.[100] The Cover Performance Report, attached as Tab 20, shows that the detected

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[99] There was relatively high hydraulic conductivity measured in a sample obtained near the bottom of boring P2N. There is, however, over 13-feet of very low hydraulic conductivity material overlaying the area from which the sample was taken. Also, some of the borings advanced into the waste encountered wetter, more permeable soils near the bottom of the waste. This may be due to liquid that was left over after the completion of closure activities. This residual liquid may be the source of the liquids being evacuated from the sumps.

[100] *See* **Tab 14**, Second Semiannual and annual 2008 Monitoring Report Bakersfield Facility.

dissolved metals and phenolics in leachate from riser P02 are all below their respective soluble threshold limit concentration ("STLC"). Additionally, no volatile organic compounds ("VOCs") have been confirmed present in any of the samples collected from the leachate collection and recovery systems ("LCRSs"). Acetone, a common lab contaminant, was reported in the sample from riser P02 in November 2008. Acetone has no Maximum Contaminant Level ("MCL") and no STLC and because it is a common lab contaminant, the detection is suspect and has not been confirmed. Thus, even if leachate could have migrated to ground or surface water or the atmosphere, because it is not hazardous and thus presents very low risk to human health and the environment, it would not have met the standard for extending the post-closure care period. The leachate, however, did not migrate to groundwater. The highest annual rainfall on record (20% greater than any other year) did not result in any impacts to human health or the environment.

Additionally, the groundwater data collected over the past 23 years supports the fact that no leachate or other hazardous waste product has migrated from the Facility to groundwater. The Cover Performance Report shows the most recent groundwater analytical results for metals and phenolics. No VOCs or other anthropogenic organic compounds have been confirmed in groundwater samples collected from monitoring wells at the Site. Further, the only evidence of a historical release at the facility was in the Western Waste Management Unit ("WWMU") and that evidence indicates that it was a non-hazardous inorganic release, consistent with the oil-field waste deposited in the Facility. The data from monitoring wells beyond the point of compliance (Poso Creek Area wells) indicates that the release is well defined, shrinking in size, and is now

confined to within the former active portion of the Facility.[101]

No evidence of a release from the LCRSs has been observed in the groundwater monitoring system 10 years after the highest rainfall season on record. The original non-hazardous release from the WWMU is attenuating in size and concentration, and groundwater monitoring results show no indications of a subsequent release. It is clear from the leachate data and the groundwater data that the cover has met the performance standard (Title 22 §66264.111 b) of controlling, minimizing or eliminating, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or runoff, or waste decomposition products to the ground or surface waters or to the atmosphere. Therefore, the data from 23 years of monitoring at the Facility do not support a finding that the post-closure care period should be extended.[102]

4.5.2 DTSC's Assumption That the Liner Will Fail and that "Hazardous Waste" Liquid as Volatile Organic Compounds Will Enter Into Groundwater Are Improper. Documents Cited Indicate That All Waste-In Was Non-Hazardous

On page 26 of its Response to Comments, under their Response to Comment 30, DTSC asserts that CWM *"retains responsibility to manage the waste as a waste until the material has been reclassified as nonhazardous. CWM management will need to provide field data to support*

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[101] Both DTSC and the Water Board have approved the discontinuance of monitoring the Poso Creek Area wells in 2008. Based on 23 years of groundwater quality data (Figure 1 (COC Parameters)), the release from the WWMU (as seen in analytical results from monitoring wells CW10, MW1, and MW06) has attenuated significantly and continues to decline, approaching background conditions (analytical results for CW17). *See* **Tab 20**, Cover Performance Report.

[102] Leachate was monitored monthly in the first quarter of 2009. In early March, about 15 gallons of leachate were pumped from Rise P-03, and an additional 5 gallons on March 16. We will provide an assessment of this issue in our regular reports to the Water Board and DTSC.

the assertion that the waste material has degraded below legal criteria." CWM has made this showing.

Site soils are not classified as hazardous waste. The groundwater does not contain hazardous constituents. And the leachate collected from the LCRSs is non-hazardous, as shown by analytical testing conducted before it is shipped offsite.

On page 31 of its Response to Comments, DTSC states "*that without proper operation and maintenance of the existing closure structure, significant impacts to human health and the environment will occur. DTSC does not have to document an existing significant impact. Without adequate long-term post-closure care, the waste material entombed within the facility will eventually be released into the environment through natural processes of rainfall, wind, erosion, and surface water infiltration to groundwater. It is not a matter of if, it is a matter of when.*"

As discussed in Section 4.1.6 above, DTSC, reported a very different set of findings to federal EPA in its *Documentation of Environmental Indicator Determination*, the RCRA Corrective Action Forms posted on EPA's website. It should be noted that CWM does not intend to abandon proper operation and maintenance of the existing cover. CWM disagrees, however, that without such maintenance "significant impacts to human health and the environment will occur." CWM is currently conducting a risk assessment, in conjunction with DTSC input, to evaluate impacts to human health and the environment.

CWM is committed to maintaining adequate safeguards at the closed facility (including administrative actions such as deed restrictions) to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated rainfall or runoff, or waste decomposition products to the ground or surface waters or to the atmosphere.

4.6 Appeal Comment 4: 60-Day Deadline for Special Permit Conditions V.1 and V.2 Is Inadequate

CWM also objects to the deadlines imposed in Part V of the Appealed Post-Closure Permit (Special Conditions 1 and 2), to the extent DTSC takes the position that the 60-day submission deadlines would preclude CWM from submitting either a waste declassification notification or clean closure work plan after the end of the 60-period. There is no regulatory basis for these arbitrary deadlines. They failed to take into account the amount of data that would need to be gathered and evaluated to prepare these materials. The fact that CWM has not been able to submit these materials within the proposed deadline, despite the aggressive pace of technical investigation at this Site, is good evidence that the deadlines were not reasonable.

4.7 Appeal Comment 5 -- Incorrect Owner/Operator Name on the Final Permit Cover Page

Chemical Waste Management, Inc. and not Waste Management, Inc. should be identified on the cover page of the Permit as the owner and operator of the Site.

5. CONCLUSION

For all of the reasons set forth above, CWM respectfully requests that DTSC adopt and implement each of its foregoing appeal comments.

Respectfully submitted,

//original signed by//

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Karen J. Nardi
Arnold & Porter LLP
275 Battery Street
Suite 2700
San Francisco, CA 94111
(415) 356-3010
Attorney for CHEMICAL WASTE MANAGEMENT, INC.